We claim

1. A process for preparing phthalic anhydride by catalytic gas-phase oxidation of xylene and/or naphthalene by a gas comprising molecular oxygen in a fixed bed at elevated temperature and using at least three coated catalysts arranged in superposed zones, which catalysts have a layer of catalytically active metal oxides applied to a core of support material, wherein the catalyst activity rises from zone to zone from the gas inlet end to the gas outlet end and the activity of the catalysts of the individual zones is set such that the least active catalyst comprises a lower amount of active composition and, if desired, additionally more alkali metal selected from the group consisting of potassium, rubidium and cesium as dopant than the catalyst of the next zone and the subsequent even more active catalyst comprises the same amount of active composition and even less alkali metal as dopant or a greater amount of active composition and, if desired, less alkali metal as dopant than the catalyst of the second zone, with the proviso that

a) the least active catalyst on nonporous support material comprises from 5 to 9% by weight, based on the total catalyst, of active composition comprising from 3 to 8% by weight of V_2O_5, from 0 to 3.5% by weight of Sb_2O_3, from 0 to 0.3% by weight of P, from 0.1 to 0.5% by weight of alkali metal (calculated as metal) and as balance TiO_2 in anatase form having a BET surface area of from 18 to 22 m^2/g,

b) the next more active catalyst has the same composition as catalyst (a) except for an active composition content which is from 1 to 5% by weight (absolute) higher and an alkali metal content which is from 0 to 0.25% by weight (absolute) lower and

c) the most active catalyst has the same composition as (a) except for an active composition content which is from 1 to 5% by weight (absolute) higher than in (a) and an alkali metal content which is from 0.15 to 0.4% by weight (absolute) lower than in (a).

2. A process as claimed in claim 1, wherein cesium is used in amounts of from 0.25 to 0.5% by weight as alkali metal in the least active catalyst.

5 3. A process as claimed in claim 1, wherein the activity of the individual catalysts is set such that the most active catalyst comprises the same amount or a greater amount of active composition and less alkali metal as dopant than the catalyst of the second zone.

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4. A process as claimed in claim 1, wherein the activity of the individual catalysts is set such that the catalyst of the second zone comprises a greater amount of active composition and less alkali metal as dopant than the catalyst of the first zone.

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5. A process as claimed in claim 1, wherein the activity of the individual catalysts is set such that the catalyst of the second zone comprises the same amount of active composition and more alkali metal as dopant than the most active catalyst.

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6. A process as claimed in claim 1, wherein the catalyst (a) has an active composition content of from 6 to 8% by weight comprising from 4 to 8% by weight of V_2O_5 and from 0.3 to 0.5% by weight of Cs (calculated as Cs), the catalyst (b) has an active composition content of from 8 to 12% by weight comprising from 0.2 to 0.5% by weight of Cs and the catalyst (c) has an active composition content of from 8 to 12% by weight comprising from 0 to 0.3% by weight of Cs.

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7. A process as claimed in claim 1, wherein the catalyst (a) has an active composition content of from 7 to 8% by weight comprising from 6 to 8% by weight of V_2O_5 and from 0.3 to 0.4% by weight of Cs, the catalyst (b) has an active composition content of from 9 to 11% by weight comprising from 0.2 to 0.4% by weight of Cs and the catalyst (c) has an active composition content of from 9 to 11% by weight comprising from 0.05 to 0.2% by weight of Cs.

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